THE NATURE CONSERVANCY NEWS

March/April 1981

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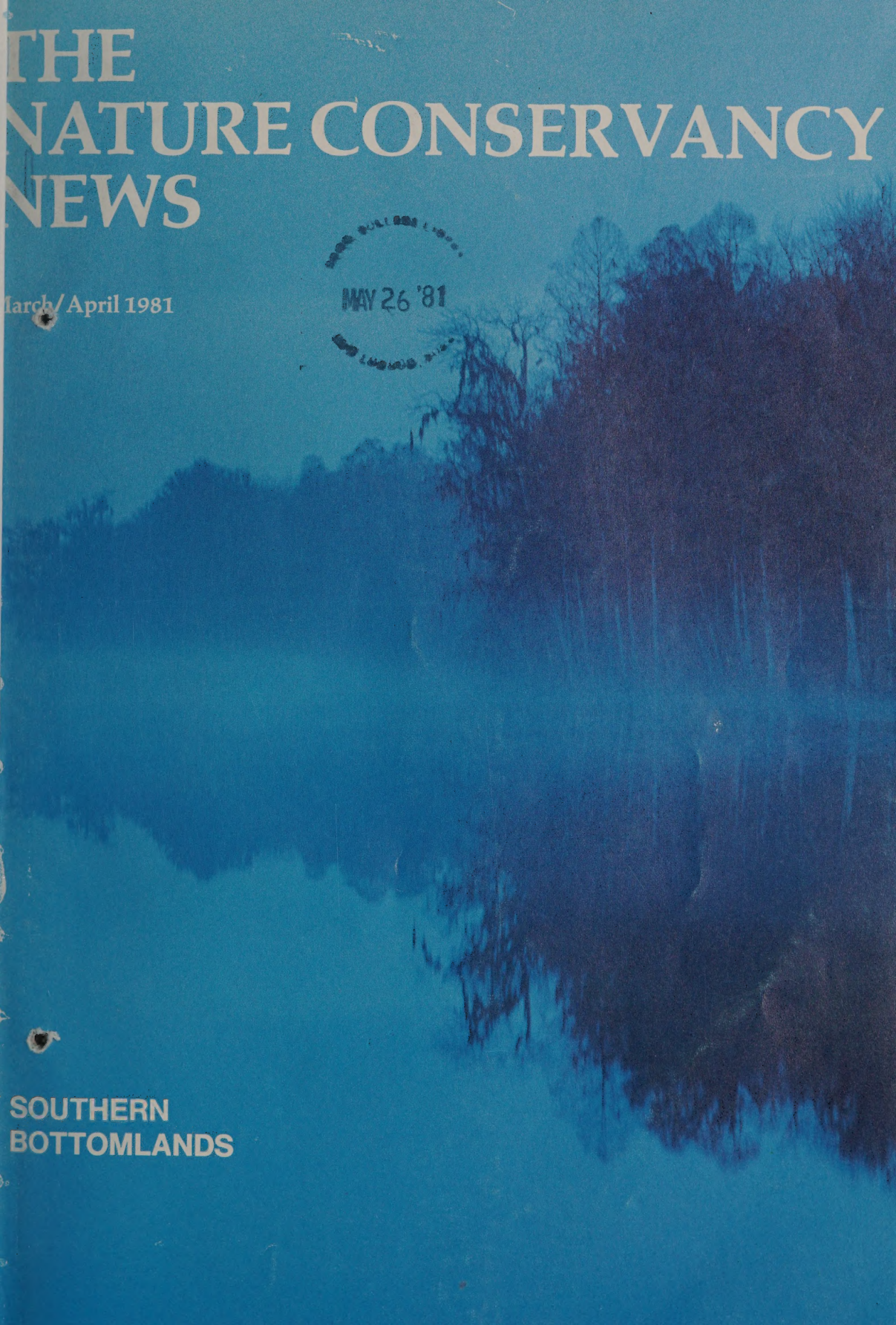

SOUTHERN BOTTOMLANDS

Thanks, Nature Conservancy

Praises be to The Nature Conservancy. It is surely one of this nation's most outstanding groups, dedicated to the proposition that the whole country shouldn't be paved over from shining sea to purple mountain majesty.

The Nature Conservancy has announced that it will invest $25 million in private foundation grants to buy and protect endangered natural areas—areas that, once gone, man can never replace.

The organization said a $15 million grant from the Richard King Mellon Foundation is to be used for the acquisition of miles of "unique hardwood forests" along unspecified areas of the Suwannee, Apalachicola, Pearl, Choctawhatchee and Pascagoula rivers—all Deep South rivers—and land in the Mobile-Tensaw delta.

And The Nature Conservancy said it would use a $10 million grant from the Goodhill Foundation of New York to acquire lands representing the nation's most threatened ecological systems. The organization would not give the exact locations of potential purchases because "speculators move in and push up prices," but a Conservancy spokesman said the purchases would include bottomland forests in the South and coastal forests in the Southeast.

The Nature Conservancy, which is based in Arlington, Va., has been engaged since 1951 in finding, acquiring and protecting endangered natural areas. It's an outstanding example of private initiative in protecting our unique natural treasures from overdevelopment. It has, over the years, acquired for protection numerous areas of great natural importance; we thank The Nature Conservancy and urge it to continue its outstanding work.

—THE ATLANTA CONSTITUTION
December 24, 1980

Let's keep up the good work:
your gift to the General Fund can make it happen.

THE NATURE CONSERVANCY NEWS

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COVER: Reflections on a river of the Deep South: mist hovers over a blue Suwannee beneath moss-draped woods. Photo by Susan Bournique.

The Nature Conservancy is a national conservation organization committed to the preservation of natural diversity by protecting lands containing the best examples of all components of our natural world.

To date the Conservancy and its members have been responsible for the preservation of 1,768,940 acres of forests, marshes, prairies, mountains, and islands: home to rare and endangered species of wildlife and plants. 2,671 projects have been completed since the acquisition of the first preserve in 1954. Approximately 60% of all preserves are retained by the Conservancy and managed by volunteer land stewards.

A membership, non-profit organization, the Conservancy was incorporated in 1951 in the District of Columbia for scientific and educational purposes.

A copy of the last financial report filed with the Department of State may be obtained by writing to: New York State, Department of State, Office of Charities Registration, Albany, New York 12231, or The Nature Conservancy, 1800 North Kent Street, Arlington, Virginia 22209.

The Conservancy's Richard King Mellon Grant: GREAT EXPECTATIONS

"Past performance leads to future expectations."
—George H. Taber, Vice President and Executive Director, the Richard King Mellon Foundation, November 14, 1980

With these words, George Taber announced the largest single grant ever made to private conservation: a $15 million award, donated by the Richard King Mellon Foundation to The Nature Conservancy's Land Preservation Fund, to launch and pursue an exciting new program for protecting the rivers of America's Deep South.

The grant will extend over a period of five years, during which time the Foundation has asked the Conservancy to match its generous award by raising a further $15 million. With total funds of $30 million, the Conservancy plans to safeguard a portion of one of our country's most valuable and severely threatened ecosystems—the hardwood forest swamps that remain along the meandering courses of the last half-dozen "unimproved" rivers in the Gulf states. They are the Suwannee, the Apalachicola, the Choctawhatchee, the Mobile/Tensaw, the Pascagoula, and the Pearl.

Clearly the trustees of the Richard King Mellon Foundation have given the Conservancy an historic challenge, one which we are proud to accept. Following such statewide and nationwide efforts as the California Critical Areas Program, now in progress, and the recently announced National Critical Areas Conservation Program (described in the Jan./Feb. 1981 *News*), the Rivers of the Deep South Program is another major step forward in setting the Conservancy's goals even higher. The new program will increase our impact beyond single projects and propel us toward comprehensive preservation strategies in which the joint participation of industry, government, and many concerned individuals is critical. The program also reflects the Conservancy's recognition that the Southeast today contains many of America's most significant and most threatened natural areas.

In the last ten years, The Nature Conservancy has demonstrated its ability to work simultaneously

Map by Joan Pennington

by William D. Blair, Jr.
President, The Nature Conservancy

with both public and private sectors in the Southeast by successfully completing many major protection efforts: the Great Dismal, Chowan, and Four Hole Swamps; the Santee marshes of South Carolina; the Virginia Barrier Islands; the Outer Banks of North Carolina; Wassaw and Ossabaw Islands of Georgia's Golden Isles; and stretches of the Eno, Altamaha, Chattahoochee, and Pascagoula Rivers.

All of these endeavors have helped us build a base for the Rivers of the Deep South Program. But more than any other, it was the Pascagoula River project in Mississippi (see the Fall 1976 *News*) that established the Conservancy's identity in the Gulf states and brought us face to face with a new threat: the continuing decimation of bottomland hardwood forests.

When Thomas Jefferson purchased the Louisiana Territory from Napoleon in 1803, over 50 million acres of bottomland hardwood forest covered what would become the southeastern United States. Today this natural system has been reduced to a mere 3.5 million acres, and the remaining forests are being cleared at the rate of 300,000 acres each year. It is quite conceivable that by 1990, not a single viable bottomland hardwood forest will be left in America.

Gone with these forests will be the rich variety of flora and fauna they support. The Florida panther, the swallow-tailed kite, the green pitcher plant, and an untold number of less familiar plant and animal species will have disappeared forever. Vanished as well, with these seasonally flooded wetlands, will be the enormous contribution the bottomlands make to controlling flood damage downstream, to reducing water pollution, and to outdoor recreation—a way of life for an entire region.

Spurred by the favorable response throughout the Southeast to the 32,000-acre Pascagoula project, the Conservancy realized an opportunity to protect, ultimately, some 350,000 acres of bottomland hardwood forest along the floodplains of six major southern rivers. Working with the trustees of the Richard King Mellon Foundation, Conservancy Vice President and Director of Land Acquisition David E. Morine was able to design and develop a major preservation program involving the active collaboration of government, industry, and citizens throughout the South and across the country.

In protecting these rivers, forests, and swamps, the Conservancy will be working to insure both the natural integrity of the ecosystem and the continued availability of certain natural resources to meet other needs. Both are possible, for bottomland hardwood forest is a tough system. Those that remain have historically been managed for hunting, fishing, and some selective timber cutting, without substantial interference with the bottomlands' natural functions. We hope to maintain the status quo. The real threat to these ecosystems comes not from a plan for well-balanced multiple-use but from their total destruction through haphazard development.

The Richard King Mellon Foundation grant of $15 million for the program, which follows earlier grants of $9 million to the Land Preservation Fund, is dramatic testimony to the Mellon trustees' expectations of The Nature Conservancy. I know that all of our members share the determination of the Conservancy's Board of Governors and staff to fully meet those expectations. In doing so, it is our hope that Americans for many generations to come will continue to enjoy, appreciate, and benefit from the unique and priceless riverine woodlands and streams that comprise the heart of the Deep South.

Rescuing the Rivers of the Deep South

by Donald G. Schueler

None of them knows what is happening. In the clamorous rookery, hidden from the river by screens of willows, more than one hundred pairs of egrets, herons, and ibis are concerned only with the ancient business of breeding and begetting. Among the welter of outreaching roots and cypress knees, water snakes unwind and an alligator, clambering onto a log, keeps its prehistoric appointment with the sun. In the shallows where the log is anchored, a five-pound bass abruptly swallows a minnow. The minnow, indigenous only to this river system, has never been discovered by a naturalist and is, therefore, innocent of any name. Only the bass knows if the little fish tastes good. A dozen yards away, a bobcat rearranges herself more comfortably in the husk of a dead sweet bay and goes back to sleep with the river purring in her ears. She has registered the fact that there are humans about; their scent is in the air. They are less than a quarter-mile away as herons fly. However, as the river flows, the people are six times that far off, and for the last hour they haven't moved.

There are three: two men and a ten-year-old boy, three generations of the same family. The river, the warmth of late morning, and the circumference of the small boat enclose them in a drowsy harmony. There is little conversation. Each has his own thoughts to think, although these are occasionally intercepted when the plop of a leaping bass reminds them they are here to fish. At the moment the eldest of the three is remembering another morning on the river, much like this one, when he was his grandson's age.

Of all the species that share the river on this spring day, only the three fishermen are consciously aware of past and future time. Yet they don't really understand what is happening either.

Five miles to the north, just out of earshot, enormous draglines are gutting the river's bed. To the

© 1981 Donald G. Schueler

east, bulldozers have already shoved 5,000 acres of hardwood trees into enormous pyres that will be lit as soon as they are dry. Eight miles to the south, where the river begins to form its delta on the Gulf of Mexico, a new interstate highway, shaking with the roar of traffic, crosses its new bridge.

The river is dying. For centuries it has found its everchanging way through the wide alluvial plains, which the river's former selves have arranged and rearranged by cutting off a bend here, raising a bluff there, flooding or drying out the accompanying forests according to the season and the river's mood. All that will end. In less than two years, the river will be a drainage ditch, neatly diked and dredged. The adjoining lowlands, no longer subject to the stream's seasonal overflow, will eventually become a 20,000-acre field of soybeans. The rookery will expire, deprived of the teeming shallows that account for its existence. The alligator will fare about as well as might be expected in an open ditch. The bobcat will emigrate to the upland pine plantations where it will starve, if its human enemies do not find it first. Even the bass and the nameless minnow will disappear; the channelized river will contain only two percent of the fish it now shelters.

There will be countless other expirations. Indeed, the death of the river will amount, on the local scene, to a biological holocaust. An endemic subspecies of turtle, an obscure variety of wax myrtle, the Gulf sturgeon, the local populations of otters and rare swallowtailed kites, as well as the last southern black bears in this river system will all simply vanish. Even a long list of common-to-abundant species like deer, raccoons, squirrels, myrtle warblers, and barred owls will decline in the area to a fifth or a sixth of their present numbers.

For the three rural fishermen, the river's death will not at first appear to be a cataclysmic event. Yet it will harm them as well, in ways which no computer analyst—much less they themselves—measure now. The river is part of the fabric of their lives. When they can no longer fish here, or hunt and explore along its shadowed banks, their lives will change unobtrusively, and that change will become part of a larger pattern. The boy's

Scenes of southern river-life. Opposite: at the ibis rookery—ballet enskied; top: bobcat at rest; above: American alligator, log-lodged for a sunning.

father will move his family to Atlanta, Birmingham, or Baton Rouge, deciding that only higher wages can buy a higher quality of life. Pulling up roots will not matter greatly, because to him one place has become pretty much like any other. His son will grow up with only a flickering recollection of this lazy morning, and there will be no others like it when his own son is ten years old. The grandfather, sitting on the porch of a silent house in a dying southern town, will vaguely wonder why everything in his life has so mysteriously changed.

The river, which the old man will revisit in his thoughts, lies in the Gulf South somewhere between Texas and central Florida. It has a hundred names: Calcasieu, Red, Bayou Bouef, Tombigbee, Tippah, Black. . . . All of these rivers are part of one of the most encompassing and least noticed ecological catastrophes in our nation's recent history. The consequences of this disaster are still not fully understood; most of us still do not know what is happening.

The river systems of the Deep South are the region's most vital resource. This is true not because they are so few, as in the West, but because they are so numerous. Nor is it because they run swift and deep and (originally) clear, as in the North, but because they are meandering and silt-laden. When they are allowed to be themselves, the southern rivers generate an elaborate ecological tapestry, which, for sheer biological richness and diversity, cannot be matched by any other waterways in the country. They also provide much of their own flood control: the bottomland forests that line a river's course are watersheds that retain 16 times their biotic weight in flood waters. They are their own aquifers, replenishing water tables for miles around. They cleanse themselves, and us, of the sewage and pollution that filter through their swamps and marshes. Everywhere along their twisting banks the rivers refurbish the intrinsically poor soils of the region with an overlay of thick sediment. It is this process of silt deposition that created the plantation South and that still supports one of the most productive agricultures in the world. And when the rivers finally reach the Gulf of Mexico, they perennially renew the continent's greatest fishery while building new land areas.

These waterways do even more than this. They invent and reinvent the South itself. Live oaks, raised porticoed homes, cypress and Spanish moss, cottonfields and alligators. . . . Not only are these the icons that represent the region in tourist brochures, but at a deeper level, they express everything that is valuable in southern culture. In the most literal sense, they are the rivers' creations.

Opposite: river in bloom—a water lily stars the surface near the source of the Suwannee; above: great egret nestlings receive parental bounty.

The rivers set the tempo, dictate the lifestyle, affect most paychecks, provide outdoor recreation, define esthetic tastes, shape human sensibilities.

Ironically but predictably, the very prevalence and largesse of the Deep South's waterways have made their human beneficiaries indifferent to their value, with the result that in this supposedly enlightened environmental age, they are now being squandered as ruthlessly as were the bison on the Western plains 100 years ago. That idea takes some getting used to, but it is true. Tens of thousands of river miles have already been "straightened" and "improved," with the federal government footing most of the bill. Of the 50 million acres of river bottomland forests that once covered the Southeast, nearly seven out of every eight acres have been drained and cleared. In the Mississippi River Valley, the heartland of the bottomland ecosystem, the experts predict that if the present rate of clearing goes on, only token fragments of the original forest will be left by the year 2000.

No one doubts that many southern rivers required taming to protect people from loss of life and property. But, except in terms of maintenance, the need for that type of control is long since past. Most flood damage that occurs now is actually aggravated by the water-constricting effect of the levee-and-drainage projects that already exist; and virtually all ongoing projects serve not as life savers, but as indirect subsidies for agribusiness and barge companies. Given the cost both to an irreplaceable resource and to the taxpayer, especially in an age when government spending and inflation are matters of concern, it seems clear that the projects, not the rivers, are in need of control.

It is also apparent—for the bobcat or the anonymous minnow, for the nesting herons or the three fishermen and millions like them—that no system of cost-accounting will adequately measure what is being lost. Nevertheless, the destruction proceeds full speed. Between now and the publication of the next issue of *The Nature Conservancy News,* more rivers will die. And 50,000 acres of bottomland forest will die with them.

All the tidings are not grim, however. During recent years the South has become less defensive about itself. The not-so-long-ago backwater region of "hookworm and racism" has become the promising—if not promised—land to millions of people from other areas who are getting tired of city grime and crime. Many of these people are eager to protect the rural South. Deep in the heart of the

Pausing among bald cypress trees, a southern kayaker finds wilderness close to home.

Sunbelt, where conservationists were until recently a small and uncherished minority, the idea of salvaging the environment has at last become a force to be reckoned with.

Appropriately, the new concern is focused on the region's rivers and wetlands. State and federal agencies are buying some important tracts, and two states, Georgia and Louisiana, have set up their own scenic river systems. Louisiana's Governor Treen has lent his support to an imaginative plan to protect the vast swamp wilderness of the Atchafalaya Basin. In all of these cases, private environmental groups were the first to take the initiative; and, of these organizations, none has understood the urgency of the issue or acted on it more effectively, than The Nature Conservancy. In recent years it has been responsible for the rescue of many threatened swamps and bottomlands. However, these past accomplishments have merely set the stage for the new Rivers of the Deep South Program, which, even by the Conservancy's normally ambitious standards, is remarkable for its audacity.

The project singles out six major river systems in the Gulf Coast states for protection: the Suwannee, Apalachicola, and Choctawhatchee of the Florida Panhandle; the Mobile/Tensaw in southern Alabama; the Pascagoula in Mississippi; and

the Pearl on the Louisiana/Mississippi border. These rivers and their ecosystems are still relatively intact. All of them are home to more threatened and endangered varieties of flora and fauna than can be found in many national parks—a naturalist's ark of species, ranging from the spectacular (the bald eagle, Florida panther, osprey) to the seldom-heard-of (mole snakes, dusky gopher frogs, a rare corkwood, assorted bats and salamanders). The Apalachicola, for example, can boast a greater variety of amphibians and reptiles than any other place in the United States. The last stronghold of the Alabama black bear is in the Mobile/Tensaw delta. A few sturgeon still call the Pascagoula home and eagles nest along the Suwannee.

The aim of the Rivers of the Deep South Program is to acquire key tracts along the banks of the six rivers. Some of these areas adjoin publicly owned lands that the Conservancy has already rescued on behalf of state or federal agencies. This is notably the case in Mississippi, where the proposed acquisition of 25,000 acres of wetlands on the lower Pascagoula River will be added to the existing 35,000-acre management area that the Conservancy won for the state in 1978 (described in *Preserving the Pascagoula,* University Press of Mississippi, 1980). Now the Conservancy will try to surpass that remarkable achievement in next-door Alabama, where a 190,000-acre wilderness in the Mobile/Tensaw delta is the prize. In the case of the Pearl River, 20,000 acres have already been authorized, with Conservancy help, as the Bogue Chitto Wildlife Refuge. But there are still 10,000 acres of crucial marshland that must be purchased before the river can be considered saved. In Florida, the Conservancy has taken the first step in a 20,000-acre project along the Choctawhatchee by acquiring the river's 2,760-acre delta. Meanwhile, the organization will enlist federal aid in acquiring 50,000 acres at the mouth of the Suwannee and 35,000 acres along the Apalachicola.

All told, The Nature Conservancy's bold vision encompasses some 350,000 acres, a cornucopia of the most ecologically valuable river habitats in the Southeast. The Mellon Foundation's magnificent gift to the Conservancy of $15 million provides the essential "seed money" for the proposed acquisitions. Moreover, most of the land to be acquired is owned by large timber companies that have dealt with the Conservancy before and respect its businesslike style. Still, the negotiations to come will be arduous and complex, with the outcome by no means certain.

But the Conservancy must succeed. And soon. The lives of six of the nation's most splendid rivers depend on it. Their fate will determine whether the sons and daughters of children now growing up will have the right to bring *their* children someday to the quiet mirrored places where alligators bask, herons roost, and yet unknown creatures await discovery.

In undertaking the Rivers of the Deep South Program, The Nature Conservancy plays for higher stakes than perhaps it ever has before.

Don Schueler is a contributor to *Smithsonian, Audubon,* and other magazines. His books, *Preserving the Pascagoula* (University of Mississippi Press) and *Incident at Eagle Ranch* (Sierra Club Books), were published last fall.

A Pearl Beyond Price

by Bruce Brady

The sun was up by now, but its brilliance was obscured by the black wall of timber that loomed along the sides of the river. Here and there a shaft of light penetrated the canopy of trees above us and fell on the dew-laden forest in alternate patterns of sun and shadow. The surface of the Pearl was slick and dark, and a wisp of haze curled upward in the dawn.

The current caught our johnboat and slipped it to the channel side of the river. From the bow Bob made two deep digs with his paddle and brought us around parallel with the bank. Just ahead the twisted limbs of a submerged oak protruded through the water's surface. As we floated past it, Bob whipped his lure between the branches of the drowned tree and began a rapid retrieve back to open water.

As the spinner cleared the limbs and fluttered near the surface, a bass hammered it. Bob's rod came back into a tight bow as the fish exploded through the surface in a gill-shaking rage. A wide grin spread across my friend's face as the fish pulled his way downward, reaching for the roots below. The little rod pumped with the power of the fight, and the fish made three gallant jumps before turning on his side and sliding into Bob's waiting hand.

The bass was short and thick, his body tempered for battle by the currents of the river. Bob removed the hook, admired his catch for a quiet moment, then gently returned him to the river. There would be other bass we could keep to fry over a campfire at dusk.

In the meantime, we had a full summer's day before us. Ahead lay the Pearl, a sunlit ribbon of sand and water, lacing its way through green folds of forest, ever bending, ever winding its way to the Gulf of Mexico.

Mississippi's Pearl is one of the most scenic rivers in the South. It inherited its name from the rough pearls the Indians found inside the freshwater mussels it nurtures. The river springs forth in Winston County in east-central Mississippi, cascades through the spillways of 33,000-acre Ross Barnett Reservoir near Jackson, then slowly bends and turns southward to its rendezvous with the Gulf.

In days past the Pearl served as a waterway for settlers moving into virgin territory. Steamboats later plied its currents as far upstream as Edinburg in Leake County. As late as 1900, the U. S. Army Engineer's snagboat, Pearl, operated as far north as Rockport. The river was also a water highway for transporting the vast harvest of virgin forests, which was floated downstream to sawmills in south Mississippi.

With the advent of the railroads, steamboat traffic ceased and the commercial value of river transportation came to an end. Once again the Pearl settled back into the quiet patterns of a wilderness river.

Almost every family in central Mississippi has been touched in some way by the Pearl River. My great-grandfather, Pickens Brady, fought with the Confederacy in the War Between the States. Mister Pic lived into his mid-nineties, and as a small boy I was privileged to know this family patriarch. When he turned homeward after Lee's surrender, he lost his musket to the muddy waters of the Pearl when he tried to swim his horse across spring currents. His horse floundered and he had to sacrifice his rifle to save his life. His powder horn hung by a leather thong around his neck and it was saved.

The horn was passed down to me by my father, and in time I, too, will pass it along to my son. I

suppose some remnant of the old soldier's rifle still rests on the bottom of the river today.

For an hour or so we floated along casting to stumps, snags, and uprooted trees. We didn't talk a great deal, but good friends aren't compelled to make idle conversation. After we had landed and released several bass, Bob suggested we crank up our outboard motor and run downriver a mile or so to fish a stretch where a smaller stream entered the Pearl.

The sun was higher now. We slipped along with the wind in our faces, looping through serpentine bends and skipping by sandbars that glimmered in the sun. The Pearl widened here and we drifted over shoals with barely enough water to float our boat. Where the smaller stream joined the Pearl, there was a sandy towhead that formed an eddy, and we took three fish from the dark pool below it.

The rest of the morning we leap-frogged from one good stretch of river to the next, passing over shallow riffles and broad expanses of slow water. We concentrated our efforts on "narrows," where the current swept through channels of deep water near the shaded banks. Often we had only seconds to make a cast as our little boat shot by productive cover. If a spot looked especially promising, we would crank up the motor, run back upstream, and float through a second time. It required short, accurate casts, and fast work with the paddles.

It was past noon when we nosed our boat into a long sandbar and stopped to rest and eat a sandwich in the shade of a great oak. It was near that same spot on the river that I once heard three wild turkeys gobbling at dawn. Lunch finished, we were dozing in the shade when the ancient tattoo of a pileated woodpecker drifted across the lowland and echoed clear and distinct over the open water. The thought occurred to me that in another age it might have been the hammering of an ivory-bill.

The bottomland hardwood forests that line portions of the Pearl River harbor several hundred species of birds, as well as a wealth of other wildlife species: deer, turkeys, squirrels, raccoons, rabbits, bobcats, ducks, and a remnant population of black bears. These deciduous forests contain a mixture of hickory, pecan, tupelo, gum, ash, elm, cherry, and several types of oaks. It is the great diversity of such bottomland forests that makes them ideal habitats for game and nongame species alike.

The river with its bass, crappie, catfish, and other forms of aquatic life, and the surrounding bottomland forest with its varied animal life, are interdependent. To alter one of them inexorably alters the other, for the river in its natural state creates and perpetuates the woodlands, while the

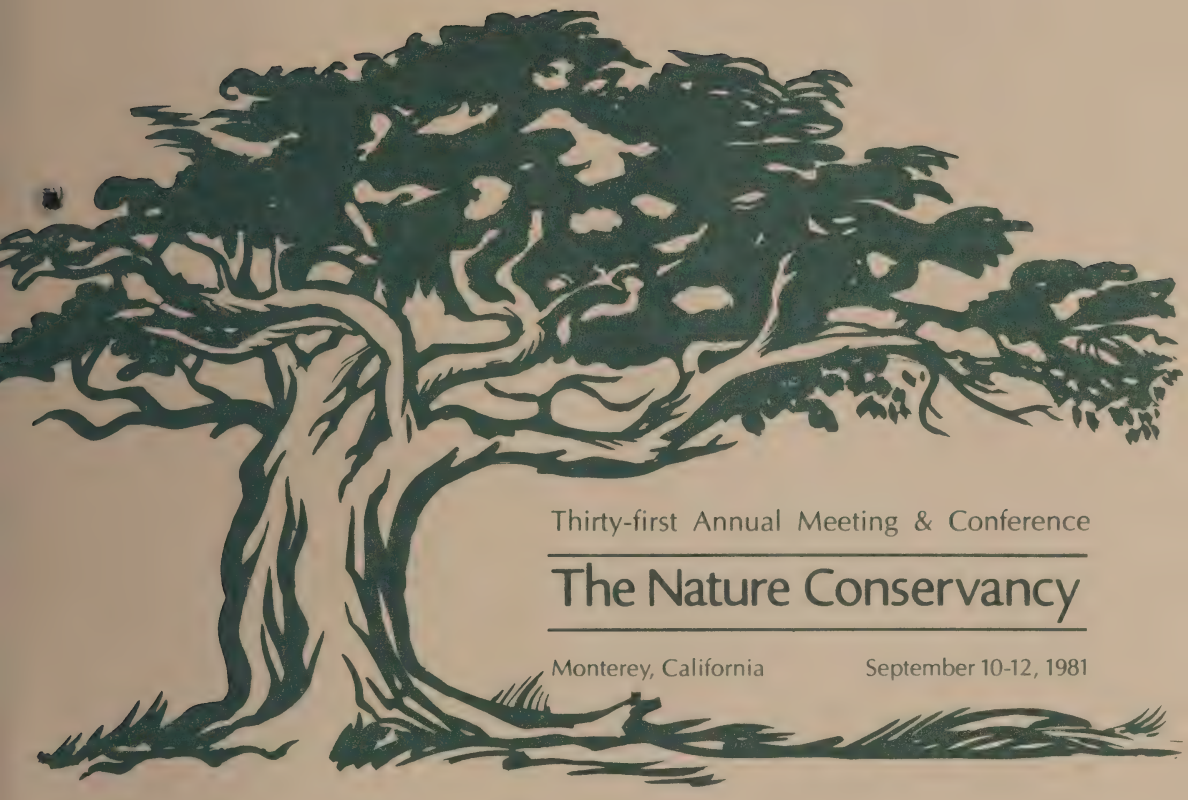
Bottomland hardwoods along a slumbering Pearl River.

woodlands in turn preserve the life of the river. This mutual dependence is one of the simplest statements of nature, while being—at the same time—one of the most difficult for us to appreciate.

That afternoon we covered several miles of river under an unblemished southern sky. We saw turkey tracks on a sandbar, and once we spied a whitetail doe standing motionless in a sunlit clearing. She had that strange, inquisitive countenance deer in the wild always exhibit. Twice we drifted by alligator slides where 'gators moved from the river to old oxbow lakes nearby—lakes formed in the misty past when the fickle river took a notion one day to change its course.

The sun was inching down behind a wall of timber to the west when we rounded a bend and pulled into a wide sandbar. It didn't take long to pitch our tent, and soon we had a little campfire blazing. While I set about peeling some potatoes, Bob walked down to the far end of the bar to fish until dark.

It was that quiet time of day. The setting sun



Thirty-first Annual Meeting & Conference

The Nature Conservancy

Monterey, California September 10-12, 1981

The immediacy of nature is overwhelming. Sea lions bark and sea otters play just offshore. . . . Hidden tidal pools surge with anemone and tiny fishes. . . . The azure-blue Pacific contrasts with the beige sand and the deep green of wind-sculpted cypress. . . . This is California's Monterey Peninsula, the select site of The Nature Conservancy's Thirty-first Annual Meeting and Conference.

Here at the edge of the oldest golf course west of the Mississippi, Conservancy members, board, and staff will convene in the low, rambling buildings of the Hyatt Del Monte. The hotel will serve as a launching point for numerous field trips, planned to offer participants full exposure to the extraordinary Pacific Coast.

Excursions before and after the conference will take in the beauties of southern and northern California. The northern tour will encompass San Francisco, Audubon Canyon Ranch, Muir Woods, Point Reyes National Seashore, and the Golden Gate National Recreation Area, for which the Conservancy purchased several major tracts. Santa Barbara, the Big Sur Coast, and the Conservancy's Santa Cruz Island will be the highlights of the southern trek.

The first day of the conference, Thursday, September 10, will begin with an orientation session. Next on the agenda are field trips to local Conservancy preserves, such as Elkhorn Slough—the only undisturbed salt marsh along 250 miles of the California Coast—and Big

Creek, a sanctuary embracing 4,000 acres of the breathtaking Santa Lucia Mountains. Evening means dining on such local specialties as abalone or chile relleno at famed restaurants on Cannery Row or in quaint Carmel.

The next morning, Friday, will be a perfect time for sightseeing on one of several field trips planned to Pt. Lobos, Old Monterey, Carmel Mission, or out into the bay. After an "idea exchange" luncheon, guests may take part in various seminars covering such subjects as "Critical Areas Programs" and "Finding the Funding," or sit in on open committee meetings of the Conservancy's Board of Governors. As the sun sets, buses will convey participants to an opening event so special that the plans are still under wraps.

The Annual Meeting of The Nature Conservancy will be held on Saturday morning, September 12, and will be followed by President Bill Blair's report on the organization's recent accomplishments. Next on the schedule are "natural area workshops"—a Conservancy Annual Meeting first—which will combine visits to nearby natural sites with workshops led by local and national environmental experts.

During the meeting, space will be set aside adjacent to the registration and hospitality tables for Conservancy Chapter exhibits from across the country, a continuous-play show of some of the Conservancy's best projects, and a bookstore offering guides to California wildlife and various Conservancy souvenirs.

The capstone event of the meeting, The Annual Awards Banquet, will complete the day. Outstanding Conservancy volunteers will be recognized for their contributions to the Conservancy, and Dr. Paul Ehrlich, ecologist, educator, author of *The Population Bomb,* and co-author of the recently published *Extinction,* will address the banquet.

The three-day Annual Meeting and Conference in Monterey is a fitting celebration to honor The Nature Conservancy's 30th anniversary. We hope you will join us.

Tentative Schedule

Monday evening, September 7—Wednesday evening, September 9
- Pre-Conference Field Trips to Southern and Northern California

Thursday, September 10
- Orientation
- Field Trips
- Dinners at Local Restaurants

Friday, September 11
- Morning Field Trips
- Luncheon
- Seminars
- Open Board of Governors Committee Meetings
- Special Event

Saturday, September 12
- Annual Meeting of The Nature Conservancy and President's Report
- Natural Area Workshops
- Annual Awards Banquet
  - Address by Dr. Paul Ehrlich

Sunday, September 13—Tuesday morning, September 15
- Post-Conference Field Trips to Southern and Northern California

Thank you for your interest in the 31st Annual Meeting and Conference of The Nature Conservancy.

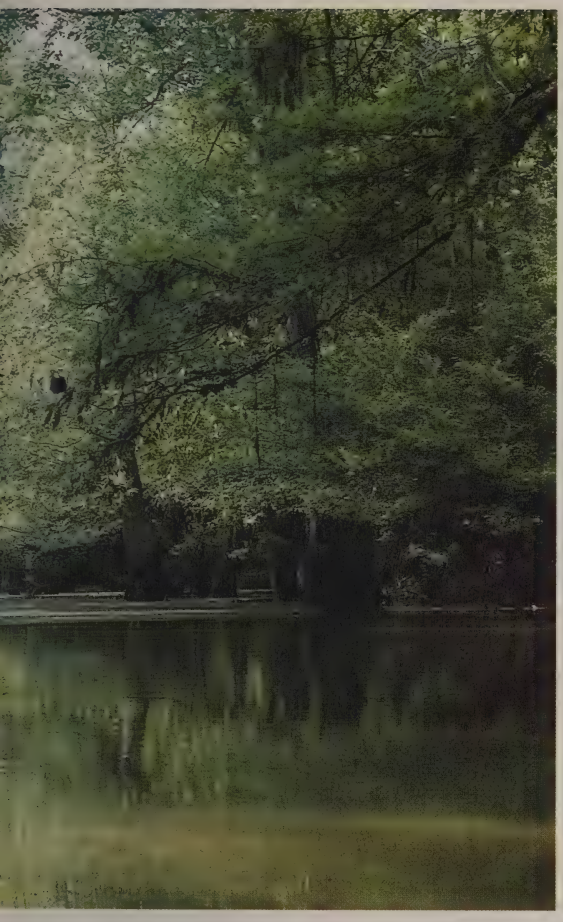
Your registration packet, containing full information on all field trips, seminars, natural area workshops, and special events, will be mailed in early May.

We hope you will decide to join us September 10-12 in Monterey, California. (Pre-conference trips September 7-9, Post-conference trips 13-15)

Thirty-first Annual Meeting & Conference

The Nature Conservancy

Monterey, California September 10-12, 1981



cast the river with its hues. At the head of the sandbar, a single snag protruded through the glassy surface and the current streamed past it with twisting shades of silver and gold. Looking downriver I could see the surface rhythmically rising and falling as the current rolled over some hidden obstacle below. There in the twilight it seemed that I was watching the very pulse of the river.

The fire's shadows were casting about now, and I sensed in a strange and wondrous way that I was part of the interdependence of wood and water. I was a part of the mystery and the joy of nature. I knew in my bones that I, too, belonged to it all.

Stars were blinking above when Bob walked into the little ring of light around our camp. Soon filleted bass and french fries were done, and we wolfed them down as they left the skillet. Then amid the night sounds of the river, we settled back and talked of other times and of other camps we had shared.

We talked about the Pearl, too, and about the changes that are scheduled for the future. Presently, development of the Pearl is being planned by an agency called the Pearl River Development District. Strategies call for channelization and a desnagging program, which will open up navigation to central Mississippi, giving inland communities outlets to the sea. Reclamation of flooding areas and hydroelectric power are planned for the river, as is a controlled water flow through the use of water-storage pools and a system of dams that will provide a constant flow of water as needed in the basin. Additional plans call for pollution abatement, boatways for big pleasure craft, and easy access through paved launching sites. Construction of water parks and improved campsites is already underway.

Full implementation of all these projects will, of course, be the death knell of the Pearl as we know it, and of its bottomland forests. Tragically, this unique and invaluable environment will be forever lost.

As we lay there by the glowing coals, I asked my friend what he thought about the plans for the river. He stared into the fire for a moment then replied, "Well, when it's all done, this river as it is today, just won't exist. Some of the changes will be good, but others are too sad to talk about. It all depends upon what you want your rivers and forests to be."

Civilization makes its demands for change, and men label these changes progress. But is it progress? My friend was right, you know. The Pearl as we have known it, with its deer and turkeys, with its misty bottoms and 'gator slides, is flowing along on borrowed time. I've been blessed to see it as a river that cuts through time, a stream of endless moods and ever-changing reflections.

The Nature Conservancy, in concert with state agencies in both Mississippi and Louisiana, is seeking to preserve some 40,000 acres of bottomland near the Pearl's confluence with the Bogue Chitto River. It is an extremely important task which, if accomplished, will save a small part of this precious heritage for southerners yet unborn.

When dawn came we broke camp, loaded our boat, and returned again to civilization and the workaday world. Somehow it didn't seem so dismal a prospect. Maybe it was because I knew that, for a time, the Pearl would still be there—bending and shining in the sun. Or perhaps it was knowing that when I felt the need for wood and wind and water, I could return again and make peace with the world.

An outdoor free-lance writer, Bruce Brady's articles have appeared in *Outdoor Life, Field and Stream,* and *Sports Afield.* Before becoming a free lancer, he was the field editor for *Outdoor Life* and a senior editor for *Southern Outdoors.*

A Federal Agency Perspective

by Lynn A. Greenwalt

Sprawling for about 35 miles along either side of the Virginia-North Carolina border through tide-water country, the Great Dismal Swamp is a lingeringly primitive wilderness. Its towering bald cypress trees predate the birth of America. They rise up from the shallows of Lake Drummond like ancient, eerie sentinels, testimonials to the once vast primeval cypress forest that covered the area.

The rich waters of the swamp sustain a veritable jungle, where northern and southern plant species intermingle in profusion. River otters are widely distributed throughout the Great Dismal; about 75 species of birds nest in the refuge, including two rare warblers: Wayne's and Swainson's.

Most of the Great Dismal Swamp was protected in 1972 through a 49,000-acre gift to The Nature Conservancy from the Union Camp Corporation. With several purchases and another donation of 11,000 acres from the Weyerhaeuser Company, the sanctuary now contains 89,055 acres. As planned, the bulk of the land, 71,507 acres, was transferred to and is managed by the U.S. Fish and Wildlife Service, which established the swamp as a national wildlife refuge.

The Fish and Wildlife Service and The Nature Conservancy have been working together for years to preserve thousands of acres of valuable wildlife habitat at minimum cost to the taxpayer and with maximum effectiveness. Because the agency's outlook and policies are most like those of the Conservancy—a fact illustrated by the Service's concern for endangered species and the protection of critical habitats—it has been easy for the two organizations to cooperate.

Integral to this relationship is the Conservancy's ability to purchase ecologically significant areas quickly and then hold them until the Service is able to assume title. In addition, it has been a highly responsive, cooperative, and effective partnership: the Conservancy does not establish the Service's priorities for land acquisition, but rather it acts at the request of Fish and Wildlife and carries out programs initiated by the agency.

For some years, the Fish and Wildlife Service has given the bottomland hardwoods typical of the Southeast high priority in its acquisitions plans. Continued sharp reductions in the extent of this habitat, if left unchecked, would have dire consequences for wildlife. The Rivers of the Deep South Program offers an exciting opportunity for the Service and the Conservancy to continue to work together toward a shared goal.

The Service has two sources of funding available to it for purchasing land for wildlife management. The first, and oldest of these, is the Migratory Bird Conservation Account, which is derived from the sale of the Migratory Bird Hunting and Conservation Stamp. All hunters of migratory waterfowl are required to buy this stamp. The now-famous "Duck Stamp" has been a source of land acquisition funding since 1934 and over the years has made possible the purchase of migratory bird habitat by the hundreds of thousands of acres.

The second source is the Land and Water Conservation Fund (LWCF), a multi-purpose fund generated largely from the lease of oil and gas resources on the Outer Continental Shelf. Its use is based on the idea that at least a part of these revenues, obtained from a public resource, should be reinvested in recreational and environmental resources for the benefit of all citizens. The Fish and Wildlife Service is authorized to use LWCF monies to purchase habitat for endangered species, to add lands to existing national wildlife refuges for recreational uses, and to acquire areas of value to wildlife. Congressional approval—in the form of legislation—is not technically required, but through agreement with the Congress, the Service

Additions to these premier national wildlife refuges, Georgia's Okefenokee at top and Alabama's Bon Secour above, were achieved through Conservancy cooperation.

has recently sought specific legislation to buy wildlife areas using LWCF monies. Thus properties such as Bon Secour and Bogue Chitto, both elements of the Conservancy's Rivers of the Deep South Program, have already received congressional approval.

While the Service has been able to justify significant appropriations from the Land and Water Conservation Fund in recent years, the current economic situation and proposed governmental budget cuts may seriously limit the amount of funding authorized in the immediate future.* The Migratory Bird Conservation Account is direct revenue to the Service, so it is not subject to budget limitations. However, a congressionally approved and appropriated advance against *future* receipts is subject to limitations, and funding from this account may also be cut back.

It will be important, then, to make clear to congressional reviewers that an expenditure of funds now—while land prices are relatively low—will save money in the long run and is, in fact, a significant anti-inflation measure. Furthermore, LWCF

*Editor's Note: Since this article was written, the Reagan Administration has proposed a reduction in the Land and Water Conservation Fund from the $543 million available to federal agencies and states in fiscal year 1981 to $45 million exclusively for federal agencies. In addition, the Administration is asking Congress to reduce the current year LWCF budget by $250 million—from $543 million to $293 million.

Day's end silhouettes two Mississippi fishermen. National wildlife refuges spell recreation for millions of Americans.

dollars are not tax revenues and therefore are not a burden to the taxpayer.

Coupled with serious budget readjustments is a growing feeling among many people, including some members of Congress, that public agencies have been over-zealous in their efforts to purchase lands, or interests in lands, for public purposes. Even though the Fish and Wildlife Service has had a long-standing policy of buying land from willing sellers—using its right of condemnation only rarely and, indeed, using fee purchase only as a last resort—there is a developing wave of opinion that public acquisition of private land should be curtailed unless the purpose is clearly in the public interest. In this context, purchasing land because of its value to wildlife may not always be considered an action in the public interest.

This is a misapprehension based, in part, on the idea that lands included in the National Wildlife Refuge System are in some way "locked up" and their uses sharply restricted, if not stopped altogether. They are not.

Under the law, national wildlife refuges are established for the purpose of protecting, preserving, and enhancing wildlife. The Service's policy in managing these lands is that any use must be compatible with that purpose. Refuges are managed so that their use is broadly based, but always on the premise that the needs of wildlife come first. Thus, it is possible that timber harvesting can be continued, so long as it is done in a way consistent with the well-being of animal populations. Grazing, trapping, hunting, fishing, oil and gas development, and general outdoor-related public recreation can be permitted on the same terms. There may be limitations on these uses, depending on the needs of the wildlife involved, but in no case is there an encompassing premise that "non-use" is necessary for proper wildlife management.

One of the fundamental principles of the National Wildlife Refuge System is that refuges are places where animals and people should meet—on wildlife's terms. In this way, we can better understand the role of natural systems and come to recognize how human activities affect them. An appreciation of animal populations and their habitats is also gained, without jeopardizing the rights of wildlife to live in the refuge.

If this nation is to succeed in improving its economy, its applications of developing technologies, and the overall quality of life for its people, then all of us must learn how to pursue our lives and livelihoods without sacrificing the continued well-being of the wild creatures with which we share the environment. Properly managed national wildlife refuges can be valuable models for demonstrating how this can be done.

The Rivers of the Deep South Program, then, offers an opportunity to create these models. Within the bottomland refuges, forests can still be well-managed; hunters and fishermen can continue to enjoy their sports; commercial fishermen can go on earning a living; oil and gas developers can press on with their work; and the public can take advantage of the opportunities to use these lands and, in so doing, increase its understanding of the values of wildlife and wild places.

The nation will overcome its economic problems in time; we will be able to solve the energy problems now confronting us; and we will eventually enjoy a resurgence of prosperity that will enable all of our citizens to improve, with fewer obstacles, that elusive "quality of life" about which we care so much. There is, however, the real possibility that we will have achieved all these goals only to discover, too late, that the wildlife and wild places—which are a major component of our lives—will have been lost forever. It is imperative that every effort be made to insure protection for these fragile and vulnerable resources—at the same time that we solve the nation's problems.

The Fish and Wildlife Service and its National Wildlife Refuge System can and should be an integral part of the effort to preserve areas encompassed by the Conservancy's program. This task will not be accomplished easily, however. Care must be taken to insure that congressional—and public—interest in the Rivers of the Deep South Program does not waver. Every effort must be made to demonstrate that the conversion of private land to public purpose is in the long-term public interest. Funding necessary to carry out the program *must* be made available. The Land and Water Conservation Fund and the Migratory Bird Conservation Account, both of which should be employed by the Service in its role in the program, must remain viable and accessible if this and other land acquisition plans are to succeed.

With continued cooperation between the Fish and Wildlife Service and The Nature Conservancy, this venture can yield immeasurable benefits to the country—benefits that will become increasingly clear, and increasingly valuable, with the passage of the years.

A career U.S. Fish and Wildlife Service employee, Lynn A. Greenwalt was Director of the Service from October 1973 to January 1981. During his tenure as Director, Mr. Greenwalt worked with the Conservancy in creating or adding land to some of the largest and best-known federal refuges in the country, including the Sevilleta National Wildlife Refuge in New Mexico, the Great Dismal Swamp, the San Bernard Refuge of Texas, Oregon's Bear Valley, and the Bon Secour Wildlife Refuge in Alabama.

Guardians of the Bottomlands: A Cooperative Effort

by John J. Stephens
Vice President and Group Executive
Wood Products and Resources Group,
International Paper Company

At our 1977 Annual Meeting in Atlanta, Georgia, the International Paper Company announced that we were donating 26,000 acres of rich marshes, wooded uplands, and live-oak hammocks to The Nature Conservancy. Known as the Savannahs at Genesis Point, the land lies between the mouths of the Ogeechee and Medway Rivers in the extreme eastern portion of Bryan County, Georgia. The property, which had been preserved in its original state since International Paper acquired the land almost 30 years ago, was subsequently transferred by the Conservancy to the Georgia Department of Natural Resources. To this day the Savannahs remain unspoiled.

International Paper Company is one of the largest wood processors in the world, as well as the steward of America's largest private holding of timberlands. And although International Paper's primary objective is to produce wood fiber, the company also is aware that managing a finite resource like land requires a balanced approach. One must understand the various demands placed on undeveloped areas, while also considering the needs for recreation and conservation. Proper management of land will meet these needs.

To insure that sufficient areas are available for conservation and recreation, while maintaining maximum wood production, we must determine the highest and best use of all lands we own. This is an enormous undertaking, and we have found no partner more adept at helping to identify those lands most suitable for conservation than The Nature Conservancy. Over the past few years, International Paper and the Conservancy have cooperated on a number of successful conservation projects. The new Rivers of the Deep South Program will undoubtedly offer more opportunities for the Conservancy and International Paper to work together.

The Conservancy first approached International Paper in 1976 as part of a cooperative project with the State of Georgia to protect Ossabaw Island, appropriately called "the crown jewel of the Georgia Isles." Genesis Point, which lies adjacent to Ossabaw—separated only by the Intracoastal Waterway—was part of a large block of timberland owned by International Paper.

Knowing that the Conservancy had worked successfully with other major forest products companies such as Union Camp, Georgia Pacific, St. Regis, and Champion International, we decided to explore conservation alternatives for Genesis Point. After inspecting the 26,000-acre property with the Conservancy and the state's Department of Natural Resources and reviewing other uses, we decided that the highest and best use of the land was for conservation. Not only did our donation of the Savannahs protect a significant tract of land —one of the most biologically diverse and productive marshes in the country—but the gift also enabled the State of Georgia to use the Conservancy's subsequent transfer of the property to obtain federal matching funds for purchasing Ossabaw Island.

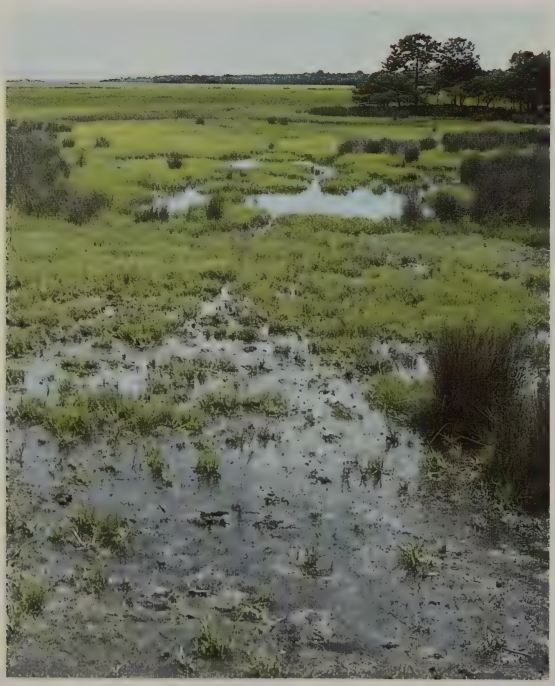
The catalyst that has brought together the International Paper Company, The Nature Conservancy, and the State of Georgia is our country's tax laws—laws that enable us to donate tracts of land and, in exchange, to receive deductions of the properties' fair market values from the company's taxable earnings. These laws benefit everyone—from people who will enjoy the preserved areas for generations to come, to shareowners of International Paper. The tax law provisions make the public interest compatible with management's responsibility to profitably employ assets entrusted to it by the company's shareowners.

Mississippi's meandering Pascagoula. In 1979 the Conservancy assisted the state in acquiring 3,000 acres from International Paper to extend the Pascagoula Wildlife Management Area.

Since the 1977 Genesis Point donation, International Paper has pursued one or more new projects each year with the Conservancy. Most of our property negotiations with the Conservancy are outright gifts, but on occasion, timber production needs must be combined with conservation.

For example, we were asked to donate 4,400 acres of prime bottomland hardwood and pine plantations along major streams in Jackson and George Counties, Mississippi. The land lay adjacent to the state's Pascagoula Wildlife Management Area and was being sought as an addition to the preserve. After establishing commercial timberland values and completing on-the-ground inspections, the Conservancy worked out a sale that was beneficial to International Paper and to the State of Mississippi. We kept all the pine tracts, while the state purchased the bottomland hardwood parcels along the streams for less than 75 percent of their fair market value. In this way, 3,000 acres were added to the Pascagoula Wildlife Management Area, and International Paper used proceeds from the sale to buy other valuable timberlands.

The Conservancy's business-like approach to identifying and protecting significant natural areas and its awareness of corporate realities are two of the reasons why International Paper has become involved in conservation. In addition to specific projects, we have also made a $100,000 pledge to the Conservancy's Land Preservation Fund, thereby encouraging other forest products companies to support the fund.



Tidal marsh in Georgia's Savannahs at Genesis Point: a 1977 gift to the Conservancy from International Paper. The estuarine expanse was conveyed to the state.

One of the greatest challenges facing the Conservancy's Rivers of the Deep South Program is identifying hardwood tracts having multiple-use opportunities. Contrary to popular belief, hardwood tree species in the Southeast are gaining in value, for several reasons. One is that recent technology now offers the possibilities of using a higher mix of hardwood with pine and other softwoods for pulp and papermaking, as well as for solid wood panels. Also, what until recently would have been considered "trash" hardwood now has potential as industrial fuel. As the cost of fossil fuels increases, the "break-even point" for economically harvesting and transporting hardwood for fuel becomes more attractive. Most forest products companies in the Southeast study hardwood species and manage hardwood plantations much as they do stands of southern pine.

The success of the Conservancy's new program —and its point of mutual benefit to hardwood timberland owners—will depend on identifying tracts of land that could be subjected to intensive management (including harvesting, transporting, and replanting with favored species), but that would be too expensive to manage in that way. Most major timber companies have some areas of this type that have not been logged for some time—usually because of continuous flooding—and thereby produce very little return for the company. These tracts probably have a much higher value for wildlife than for commercial timber purposes.

Another factor to consider is the potential value that some bottomland hardwood forests may have below rather than above ground, in the form of oil, gas, and minerals. Because of this, some bottomland owners have resisted giving their land for conservation purposes. However, because of federal legislation supported by the Conservancy, a landowner can now donate property for conservation, while retaining subsurface oil, gas, and mineral rights.

It is a combination of these factors—increased public demand for recreation and conservation, successful collaboration with the Conservancy, the nation's tax laws, and legislation—that has enabled International Paper Company to become a member of the country's conservation community. The Company recognizes the need for a balanced approach to the use of America's resources, and it will do its part to make the Conservancy's Rivers of the Deep South Program a success.

ECOLOGY FORUM

No. 40

VALUING THE BOTTOMLAND HARDWOODS

River and flood: it's an ancient story. Waters rise and fall with the seasons and with signal events in the watershed, like hurricanes and droughts. The life of a river and the land along its banks is adapted to and dependent upon these natural fluctuations.

A floodplain, with its cycles of wetness and dryness, fosters a rich and intricate mosaic of habitats. Bottomland hardwood forests occupy the floodplains of southeastern rivers in several general categories: alluvial rivers, spring-fed rivers, and non-alluvial (blackwater) rivers. Scientists have recently classified the bottomlands in terms of zones to more clearly describe the complex pattern of biotic associations they support. These zones are as follows:

- open water of river, bayou or oxbow lake;
- gum-cypress forests;
- overcup oak-water hickory associations;
- diverse associations with such trees as laurel oak (Nuttall oak in the Mississippi Embayment), American elm, sweetgum, and sugarberry;
- old levees and ridges with swamp chestnut oak, cherrybark oak, and sometimes even beech and loblolly pine.

The diversity of this list suggests the biological richness of southern bottomlands. But they have another, less apparent natural value: the capacity to manage and purify river waters. Bottomland hardwoods play a critical role in diminishing high-water "pulses" that can double a river's velocity and quadruple its erosive power. With wide, shallow root mats anchoring their soil, these swamps serve as giant sponges—holding the flow and filtering it by passing it slowly over the floodplain.

Most low flows are handled by the river channel itself, high or flood flows by the floodplain channel, which consists of first and second "bottoms" and successively higher terraces. While the floodplain has a steeper incline than the low-water (or river) channel, vegetation and debris exert a braking effect upon the water if trees have not been removed. Other floodplain features include residual sandhills (remnants of Pleistocene wind dunes), oxbow lakes, sloughs, and depression ponds—elements of the complex riparian landscape.

Flood peaks do not get as high nor do they rise and fall as rapidly where bottomland hardwood forests are intact. This is a fact that demands attention since the most dramatic large-scale erosive changes (bank cuts and fills, alteration in river course, and movement of great quantities of sand) occur during high flows. Where the hand of development has cleared bottomlands or diverted water away from them through engineering, downstream damage can be catastrophic.

In addition to stemming excess water, bottomland hardwoods serve as filters to clean river waters of pollutants. It has been shown that a few hundred acres of swampland can purify the wastes of

"Flood peaks do not get as high nor do they rise and fall as rapidly where bottomland hardwood forests are intact."

a small town. In Sumter County, Florida, a 506-acre gum-cypress swamp on a thick peat bed treated the sewage of Wildwood (population 2,500) for 19 years. Flow through the seepage swamps removed 98 percent of the phosphorus and 90 percent of the nitrogen and reduced fecal coliform bacteria from 16 million to 3,000 per liter in two miles. The tertiary treatment benefits were calculated at some $80,000 per year back in 1974. With the rising costs of tertiary treatment, such natural potential cannot be ignored.

An even more important function of the bottomland hardwood forests is their capacity to

process tons of toxic nitrates and pesticides (from farmlands), poisonous heavy metals (from industry), and even—in some cases—radioactive wastes. The pollutants are either bound to sediments and deposited on the floodplains, where they're broken down or immobilized, or they are locked into harmless form by organic molecules and carried downriver into estuaries. Pesticides cling to clay

"Alluvial floodplains have proved to be sinks for radioactive cesium, oil, nitrogen, and phosphorus as well as sewage and fly ash."

and organic particles at levels 10,000 to 100,000 times higher than their concentration in water. Alluvial floodplains have proved to be sinks for radioactive cesium, oil, nitrogen, and phosphorus as well as sewage and fly ash.

Floodplain soil surfaces, with their aerobic and anaerobic conditions, can process contaminants in river water through denitrification and sulfate reduction—and through other biochemical activities of the living organisms that teem in swamp waters and mud. Because stream channelization eliminates the natural contact of floodwaters with the floodplain floor, water quality is likely to decline where it occurs. In a 1977 study of blackwater streams in North Carolina, higher levels of nitrate and total phosphorus were found in those where channelization had taken place.

In 1970, the economic value of 2,300 acres of Georgia Piedmont bottomlands was estimated at $3,125 per acre. If potential values were recalculated, adding factors like flood control, heavy metal immobilization, wildlife support, and controlled movement of bed load, the estimated value would be far higher.

In any case, it is all too clear that we have been slow to recognize the value of this remarkable resource—and slow to ensure its protection. Inasmuch as bottomland hardwoods affect the course and quality of southern river waters, they affect the course and quality of life in the Deep South.

This article was adapted from two papers: "Values and Functions of Bottomland Hardwoods" by Dr. Charles H. Wharton of the University of Georgia's Institute of Ecology and "Characteristics of Southeastern River Systems," coauthored by Wharton and Dr. Mark M. Brinson.

A Tribute to Mellon Foundation Chairwoman

To date the Richard King Mellon Foundation has donated a combined total of $24.1 million to The Nature Conservancy, including $9.1 million for our Land Preservation Fund and the recent $15 million grant for the Rivers of the Deep South Program. Mrs. Constance Prosser Burrell, the remarried widow of Richard King Mellon—philanthropist, banker, and industrialist—was the chairwoman of the Mellon Foundation from the time of its establishment in 1947. Much of the Foundation's concern for conservation may be attributed to Mrs. Burrell.

The Conservancy's Board of Governors and staff members wish to express their respect for Mrs. Burrell, who died on November 12, 1980, at the age of 70. Her generosity will be long remembered by all of us who love the wilderness and all it harbors.

Special Offer to Members of
The Nature Conservancy

Preserving the Pascagoula
by Donald G. Schueler

Preserving the Pascagoula is the account of the complex and sometimes delicate process by which The Nature Conservancy and the State of Mississippi worked to save 32,000 acres of the Pascagoula bottomlands in southeast Mississippi.

Not merely another account of a dramatic eleventh-hour confrontation between environmentalists and developers, the book suggests ways in which people who want to save our heritage in nature can initiate action instead of simply reacting to threats to the wilderness.

Please send me ___ copy(ies) of *Preserving the Pascagoula* at the special rate of $9.95 postpaid. My check for $_____ is enclosed.

Name _____

Address _____

City _____ Zip _____ State _____

Mail to:
University Press of Mississippi
3825 Ridgewood Road, Jackson, MS 39211

NEW PROJECTS

ARKANSAS

Overflow Bottoms (Ashley County). In cooperation with the U.S. Fish and Wildlife Service, the Conservancy has acquired 2,127 acres of prime migratory bird habitat (hardwood swamp, high and low floodplains) along the lower Mississippi floodway. Two interest-free loans—one from the Winthrop Rockefeller Foundation of Little Rock and the other from the State of Arkansas—galvanized the project, which includes a contract to purchase an adjacent 4,297 acres over the next two years. The federal Migratory Bird Commission has set aside funds for the creation of a 6,424-acre national wildlife refuge here in the southeastern corner of the state once Conservancy acquisitions are complete.

FLORIDA

Tiger Creek—Addition—(Polk County). In its passage through swamp woods and sandhills—clear, wild Tiger Creek comes within 75 feet of a small tract called Deer Run. The threat of development here has been averted by Conservancy acquisition, and the six-acre parcel of sand pine and scrub oak is now part of Tiger Creek Preserve. Habitat for bobcat, armadillo, and a number of more common mammals, the 2,881-acre natural area also boasts breeding grounds for the federally endangered bald eagle and federally threatened American alligator. The Florida Chapter's Tiger Creek Committee manages the preserve.

GEORGIA

Lula Lake and Falls Nature Trail (Walker County). A gift from the Southern Railway System, this long-abandoned rail right-of-way runs from Chickamauga up the east side of Lookout Mountain before abruptly switching back along the summit to the historic Durham coal-mine site. Surrounding this switch-back is a proposed public park that overlooks scenic Lula Lake and Lula Falls. The 134-acre right-of-way tract has been conveyed to Walker County for administration as a hiking trail.

ILLINOIS

Batavia Path (Kane County). No trains have pulled into Batavia since summer 1971, but a mile-long stretch of the abandoned railroad right-of-way (with tracks and ties removed) now serves the local people in a new capacity: as nature trail and walking path. Native prairie flora along the route includes compass plants, prairie coneflowers, and goldenrod. Purchased with funds from a local foundation, the four-acre swath has been transferred to the City of Batavia for management.

Stemler Cave Woods (St. Clair County). This 150-acre property—primarily upland forest (42 acres of which is essentially undisturbed)—contains the state's only protected sinkhole ponds. The conical or funnel-shaped depressions, formed in this case by the collapse of a limestone cave, are typical of the "karst" plains in southern Illinois. The area will be transferred to the state's Department of Natural Resources.

INDIANA

Crooked Lake—Addition—(Whitley County). A five-acre wetland addition connects Little Crooked Lake to the southern tip of this dedicated state nature preserve, acquired in 1977 by the Conservancy in cooperation with the state, ACRES, Inc., and the Crooked Lake Property Owners' Association. The glacial lake itself, one of Indiana's deepest and least polluted, lies at the headwaters of the Tippecanoe River drainage. Its waters support most fish species indigenous to the region, including the cisco (a whitefish); its wooded margins and fertile wetlands offer outstanding habitat for an abundance of birds. Now 96 acres in extent, the protected natural area is managed by the Indiana Department of Natural Resources.

Fox Island—Addition—(Allen County). A nine-acre gift of land from Sam W. Fletcher, William Moser, and Floyd B. Kelsey, Jr.—the Conservancy's fifth addition to Indiana's most popular nature preserve—holds a watering hole critical to local wildlife. Now 547 acres in area, Fox Island State Nature Preserve and County Park is noted for a forested sand dune rising 40 feet above surrounding marshland. The tract will be transferred to the Allen County Parks and Recreation Board, which owns and manages Fox Island.

George Harrison Hoke Memorial Woods (Knox County). A 60-acre tract of upland forest forms

Choctawhatchee River

Spanning the mouth of the Choctawhatchee River, this 2,760-acre expanse of floodplain forest and marshlands is an integral part of the Conservancy's newly launched program to safeguard southern bottomlands. Here on the Florida panhandle, fresh river waters enter brackish Choctawhatchee Bay, which opens into the Gulf of Mexico.

Because these delta wetlands serve to filter incoming river water, their ecological integrity is important to the water quality of Choctawhatchee Bay. And conservation management of the delta has strategic value for future protection efforts upstream, the delicate nature of its estuarine waters arguing against damaging development along the Choctawhatchee. The sheltered basin is an environment exceptionally rich in nutrients—breeding grounds for white shrimp, blue crab, striped bass, sea trout, mullet, and other aquatic fauna.

Timely acquisition of this prime property is only the first chapter of a great American protection story: The Nature Conservancy on the Choctawhatchee—a river of the Deep South.

a crescent along the west fork of Maria Creek, a small intermittent stream. A gift from Georgia W. Yocum and French Hoke Willis, the woods contain a number of very large, old-growth white oaks and hickories—a rarity in this predominantly agricultural region. The land has been transferred to the Indiana Department of Natural Resources for management as a small-game habitat area.

James Lake Wetland (Kosciusko County). This 58-acre stretch of shallow fresh marsh, deep fresh marsh, and shrub swamp is part of the extensive wetlands complex between Lake Tippecanoe and James Lake in northern Indiana. The area provides breeding, nesting, and feeding grounds for numerous waterfowl and hosts many other birds as well as fur-bearers, reptiles, and amphibians. The property will be conveyed to the Muncie YMCA for management as a nature preserve within Camp Crosley's year-round environmental education program. It will be open to Ball State University for scientific research.

Merry Lea Environmental Center (Noble and Whitley Counties). A gift of 307 acres in northern Indiana from Lee and Mary Jane Rieth (through the Merry Lea Nature and Religious Foundation) contains several lakes edged with marshes, bogs with floating mats, shrub swamps, tree swamps, lowland woods, and calcareous meadows. The property harbors several plant species judged significant by the Indiana Natural Heritage Program.

Portions of the land that represent disappearing wetland community types are being dedicated as a state nature preserve. The entire area will be managed by Goshen College for educational and scientific purposes.

MAINE

Appalachian Trail (Piscataquis County). Encompassing six miles of the famous Appalachian Trail along Barren Mountain's ridgeline, this spruce-forested sweep of 1,216 acres is a gift from International Paper Company. With similar projects in other states, the Conservancy has long been involved in safeguarding portions of the Appalachian Trail System. The Maine property was conveyed to the state for management by its Bureau of Parks and Recreation, which will be assisted by the Maine Appalachian Trail Club.

MICHIGAN

Walkinshaw Wetlands (Oceana County). A breeding site for greater sandhill cranes and marsh hawks, this 850-acre Manistee National Forest inholding was acquired in cooperation with the U.S. Forest Service. The area's extensive wetlands and shallow open waters also host Canada geese, black ducks, coots, rails, and many other bird species. Walkinshaw will be managed within Manistee by the Forest Service, which has designated it habitat for a sensitive species.

MINNESOTA

Juniper Island—Addition—(St. Louis County). A four-acre gift of shoreline property from John and Margaret Frankel (who donated 18 adjacent acres in 1970) enlarges this island preserve in northern Minnesota's Lake Vermilion. Pine, birch, and aspen line the rocky lakeshore. Like the earlier gift, this tract will be transferred to the Minnesota Department of Natural Resources for management by its Division of Forestry.

Sandhill Crane Meadows—Addition—(Morrison County). A 22-acre acquisition enlarges the preserve northeastward, affording legal access to its crane-nesting marsh and the prairie island therein. This acquisition brings the protected stretch of marsh, creek bottom, prairie, and oak savanna to 202 acres. The preserve is managed cooperatively by the Minnesota Chapter and the Minnesota Department of Natural Resources.

Weaver Dunes (Wabasha County). A top priority of the Minnesota Natural Heritage Program, this 442-acre area of rolling sand dunes tops a terrace west of the Mississippi River. Present on the preserve are "blow-outs" (saddle-shaped breaches in stabilized dunes) and a remarkable range of dune-land successional stages, from bare sand to mature prairie to aspen and oak woods. Several plant species uncommon in the state (rabbit's pea, cottonweed, and two species of false indigo) are found here, as are Blanding's turtles. The Minnesota Chapter is working to raise $246,000 for acquisition and management of Weaver Dunes.

OHIO

Cave Hollow—Ida M. Adomeit Preserve (Adams County). A summer roosting area for the federally endangered Indiana bat, and one of two Ohio sites for the Allegheny packrat, this 30-acre forested tract is high up on the Ohio Natural Heritage Program's priority list. Several "special plants"—species that are rare, threatened, or potentially threatened in the state—occur here as well (slender blazing-star, lesser ladies' tresses, American columbo, and false gromwell), some of them in scattered prairie patches. Named for its deep cave, the property will be transferred to the Cincinnati Museum of Natural History for inclusion in the Edge of Appalachia Preserve System: an assemblage of southern Ohio natural areas to which the Conservancy has devoted acquisition efforts during the past two decades.

TEXAS

Gypsum Dunes (Hudspeth County). Stretching across a transition zone between desert plains grassland and Chihuahuan Desert, this white dune-land is formed from wind-blown fragments of gypsum: a mineral used in making plaster of Paris. The 226-acre west-Texas property is notable for occurrences of plant species endemic to gypsiferous salt flats in this portion of the Southwest—gyp grama, gyp moonpod, pink plains penstemon, trans-Pecos fleabane, and Indian ricegrass among them. The new preserve will be managed by the stewardship committee of the Texas Chapter, which has set its fundraising goal for the project at $12,300.

WISCONSIN

Summerton Bog—Addition—(Marquette County). Plentiful spring-fed streams lace this 34-acre meadow tract and flow into the fens, forests, sedge meadowland, and tamarack swamps of 310-acre Summerton Bog Preserve immediately to the south. This National Natural Landmark embraces a domed limey seepage meadow where northern relict plant species, fen plants, wild lilies, and nine species of orchids flourish. Wildlife here includes summering sandhill cranes. The Wisconsin Chapter is raising money for the addition; its goal—$39,400.

From time to time, The Nature Conservancy exchanges membership lists with other conservation organizations whose work might also interest you. In this way, we are able to increase the Conservancy's membership at a lower cost than would otherwise be possible. However, if you prefer *not* to receive these mailings from other organizations, please attach the mailing label from this magazine (or copy the label *exactly*) and mail it to:

Membership Secretary
The Nature Conservancy
1800 North Kent Street
Arlington, Virginia 22209

The Law of the Land. The Law of the Jungle. The Laws of Nature. These are the systems by which man and beast live.

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For further information, please contact Mrs. Joseph C. Hoagland, Jr., The Nature Conservancy, 1800 North Kent Street, Arlington, VA 22209, (703) 841-5347.

CORRECTION

Our apologies for an inflationary oversight in the January-February issue (page 10): the extent of America's original tallgrass prairieland has been estimated at 250 million *acres*, not 250 million square miles. While this figure is widely used, it is worth noting that if we restrict the calculation to bluestem prairie alone (including bluestem prairie lying in a mosaic with oak-hickory forest), the estimate falls to 125 million *acres*.

VISIT A MONTANA RANCH

Join us this summer and explore the Conservancy's extraordinary Pine Butte Swamp Preserve—spectacular surroundings for riding, hiking, fishing, photography, birdwatching . . . or just relaxing.

Al and Sally Haas invite you to stay at a unique dude ranch in the heart of Montana's Rocky Mountain Front. For more information, contact the Circle 8 Ranch, P.O. Box 457, Choteau, Montana 59422/(406) 466-5564.

Fall Tour Offered: Adirondack Mountain Preserves

Containing 9,000 square miles in northern New York, the Adirondack Park is the largest protected sanctuary in the continental U.S. It is so expansive that much of its interior land is still relatively unexplored.

The Adirondack tour offers Conservancy members and their guests the chance to visit the Park on the weekend of September 25-27, 1981. You will learn about the role the Adirondack Conservancy has played in preserving this vast wilderness, stay at the famous and historic Ausable Club, and visit the Conservancy's 12,500-acre Santanoni Preserve within the Adirondack Park. The cost of the trip is $125.00. Don't miss this trip to "the land that nobody knows."

For applications and details, write to The Nature Conservancy Tours, P.O. Box 3611, Washington, D.C. 20007; or call 202/466-6307.

WELCOME, 100,000th MEMBER!

The Nature Conservancy heartily welcomes its 100,000th member: Craig P. Walker of Redlands, California. Mr. Walker joined us on January 2, 1981, bringing the Conservancy to a long-sought goal.

NEXT IN THE NEWS:

THE 1980 ANNUAL REPORT

The May/June issue will bring you 1980: an illustrated round-up of accomplishments and a look at an extraordinarily eventful year.

PHOTO CREDITS: Susan Bournique, pp. 6-7; Donald M. Bradburn, pp. 16-17, 20, 23; R. J. Bridges, pp. 14, 19 bottom; John Hall, pp. 9 bottom, 19 top, 24; C. C. Lockwood, pp. 8, 11, 12-13; Tom Sennett, p. 9 top; Bill Thomas, p. 10; Skipper Tonsmeire, p. 28.

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